

ABSTRACT

A catalyst having a high catalyst activity, which enables the production of an α -olefin polymer improved in stereoregularity by decreasing an amorphous component, and a production method for the α -olefin polymer, are developed. Described are a catalyst for polymerizing α -olefin comprising a combination of (A) a solid catalyst component containing magnesium, titanium and a halogen as an essential component, which may contain if necessary, a silicon compound, an organoaluminum compound, and an electron donor; (B) an organoaluminum compound; and (C) a compound containing a C(=O)N bond such as an amide or an urea; which may further contain if necessary, (D) a silicon compound or a diether compound; and a production method for an α -olefin polymer using the same.